

WHAT IS CLAIMED IS:

1. A graphics controller for controlling a display monitor of a computer, comprising:

5 a register configured to be accessed through a bus of the computer and to store state control data designating a state that the graphics controller is to assume;

10 a logic unit configured to operate in a working state and a low power-consumption state and to transit to the working state or the low power-consumption state in accordance with the state control data stored in the register; and

15 a state controller configured to invalidate the state control data designating the low power-consumption state stored in the register, thereby to maintain the logic unit in the working state.

20 2. The graphics controller according to claim 1, wherein the state controller includes a switch provided between the register and the logic unit and configured to prohibit the state control data designating the low power-consumption state from being transmitted from the register to the logic unit.

25 3. The graphics controller according to claim 1, wherein the state controller has a first mode for prohibiting the logic unit from transitioning to the low power-consumption state and a second mode for allowing the logic unit to transition to the low power-consumption

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state, and the state controller invalidates the state control data designating the low power-consumption state, in the first mode.

4. The graphics controller according to claim 3,  
5 further comprising a register configured to be accessed through the bus of the computer and to store mode-designating data that designates either the first mode and the second mode.

10 5. The graphics controller according to claim 3,  
further comprising an input pin configured to receive from an external device a mode-designating data that designates either the first mode and the second mode.

15 6. The graphics controller according to claim 1,  
wherein the state controller includes a selector  
configured to transmit to the logic unit either fixed  
data of the same value as state control data  
representing the working state or the state control  
data to be stored into the register; and the selector  
selects the fixed data while the state controller is  
20 operating in a first mode to prohibit the logic unit  
from transiting to the low power-consumption state, and  
selects the register while the state controller is  
operating in a second mode to allow the logic unit to  
transit to the low power-consumption state.

25 7. The graphics controller according to claim 1,  
wherein the low power-consumption state is a off state  
in which the operation of the logic unit is stopped.

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8. The graphics controller according to claim 1,  
further comprising a control register configured to be  
accessed through the bus of the computer and to store  
control data for controlling a power consumption of the  
5 logic unit stayed in the working state.

9. A computer system in which an operating system  
performs power management control, said computer system  
comprising:

10 a graphics controller configured to control a  
display monitor and including a logic unit which  
operates in a working state and a low power-consumption  
state and which consumes less power in the low power-  
consumption state than in the working state;

15 a register provided in the graphics controller and  
configured to store state control data for transiting  
the logic unit to either the working state or the low  
power-consumption state;

20 a CPU that writes into the register the state  
control data designating the low power-consumption  
state, in accordance with an instruction from the  
operating system; and

25 a state controller provided in the graphics  
controller and configured to invalidate the state  
control data designating the low power-consumption  
state stored in the register, thereby to prohibit the  
logic unit from transiting to the low power-consumption  
state from the working state.

10. The computer system according to claim 9,  
wherein the state controller includes a switch provided  
between the register and the logic unit and configured  
to prohibit the state control data designating the low  
5 power-consumption state from being transmitted from the  
register to the logic unit.

11. The computer system according to claim 9,  
wherein the state controller includes a selector  
configured to transmit to the logic unit either fixed  
10 data of the same value as state control data  
representing the working state or the state control  
data to be stored into the register; and the selector  
selects the fixed data while the state controller is  
operating in a first mode to prohibit the logic unit  
15 from transiting to the low power-consumption state, and  
selects the register while the state controller is  
operating in a second mode to allow the logic unit to  
transit to the low power-consumption state.

12. The computer system according to claim 9,  
20 further comprising a control register provided in the  
graphics controller and configured to be accessed  
through a bus of the computer and to store control data  
for controlling a power consumption of the logic unit  
stayed in the working state.

25 13. A device for use as a hardware component in a  
computer, said device comprising:

a register configured to be accessed through a bus

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of the computer and to store state control data designating a state that the device is to assume;

5 a logic unit configured to operate in a working state and a low power-consumption state and to transit to the working state or the low power-consumption state in accordance with the state control data stored in the register; and

10 a state controller configured to invalidate the state control data designating the low power-consumption state stored in the register, thereby to maintain the logic unit in the working state.

14. The device according to claim 13, wherein the state controller includes a switch provided between the register and the logic unit and configured to prohibit the state control data designating the low power-consumption state from being transmitted from the register to the logic unit.

15. The device according to claim 13, wherein the state controller has a first mode for prohibiting the logic unit from transiting to the low power-consumption state and a second mode for allowing the logic unit to transit to the low power-consumption state, and the state controller invalidates the state control data designating the low power-consumption state while the state controller is in the first mode.

20 25 16. The device according to claim 15, further comprising a register configured to be accessed through

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the bus of the computer and to store mode-designating data that designates either the first mode and the second mode.

17. The device according to claim 15, further comprising an input pin configured to receive from an external device a mode-designating data that designates either the first mode and the second mode.

18. The device according to claim 13, the state controller includes a selector configured to transmit to the logic unit either fixed data of the same value as state control data representing the working state or the state control data to be stored into the register; and the selector selects the fixed data while the state controller is operating in a first mode to prohibit the logic unit from transiting to the low power-consumption state, and selects the register while the state controller is operating in a second mode to allow the logic unit to transit to the low power-consumption state.

19. A method of controlling a graphics controller including a register configured to store state control data for causing the graphics controller to transit to a working state or a low power-consumption state, said method comprising:

25 invalidating the state control data designating the low power-consumption state stored in the register, thereby to prohibit the graphics controller from

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transiting to the low power-consumption state from the working state; and

controlling the operation of the component of the graphics controller, in order to reduce a power consumption of the graphics controller stayed in the working state.

20. A method of controlling a device which is used as a hardware component in a computer and includes a register configured to store state control data for causing the device to transit to a working state or a low power-consumption state, said method comprising:

invalidating the state control data designating the low power-consumption state stored in the register, thereby to prohibit the device from transiting to the low power-consumption state from the working state; and

controlling the operation of the component of the device, in order to reduce a power consumption of the device stayed in the working state.

21. A computer system comprising:

20 a graphics controller configured to control a display monitor and including a logic unit which operates in a working state and a low power-consumption state and which consumes less power in the low power-consumption state than in the working state; and

25 a CPU configured to designate the graphics controller to transit to the low power-consumption state, in accordance with an instruction from an

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operating system;

wherein the CPU sends out an instruction, which invalidates the designation to transit to the low power-consumption state, to the graphics controller, in accordance with an BIOS, thereby to prohibit the logic unit from transiting to the low power-consumption state from the working state.

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